REMARKS

Claims 1-23 are pending in the present application. Claim 1 has been amended. Reconsideration of the claims is respectfully requested.

I.   Request for Amendments to Specification

The Examiner has requested the Applicants to insert serial numbers and remove attorney docket numbers from the specification. Responsive to this request, the Applicants have attached to this Response a proposed "Substitute Page 1", which inserts serial numbers and removes attorney docket numbers. Accordingly, the Applicants respectfully request that the Examiner accept the "Substitute Page 1" and enter these requested changes for the record.

II.   Declaration and Power of Attorney

The Examiner has suggested that the Applicants might file a new Declaration because Ned Gladstone and Edward T. Gladstone are named as inventors, but only Edward T. Gladstone's signature is present. This suggestion is respectfully traversed.

As mentioned by the Examiner, the inventor, Edward T. Gladstone, has duly signed and dated the Declaration. There is no signature present in the Declaration for Ned Gladstone. Also, Edward T. Gladstone has signed the Assignment document, which has been recorded. However, if the Examiner insists that a new Declaration should be filed, then the Applicants can file a supplemental Declaration and Power of Attorney.

III.   Request for Prior Art

The Examiner has requested any reference(s) known to qualify as prior art with respect to the instant claims. The Examiner states that this request does not require the Applicants to perform a search. The query has been made, and no prior art has been found that is sufficient to fulfill the Examiner's request.

IV.   **35 U.S.C. § 112, Second Paragraph**

The Examiner has rejected Claim 1, under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicants regard as the invention. According to the Office Action: "Regarding claim 1, lines 7-8, the language 'storage server and/or controller' is unclear." This rejection is respectfully traversed.

By this response, Claim 1 has been amended to recite "at least one of a storage server and a controller" to clarify the invention. Therefore, the rejection of Claim 1, under 35 U.S.C. § 112, second paragraph, has been overcome and should be withdrawn.

V.   **35 U.S.C. § 102, Anticipation**

The Examiner has rejected Claim 1, under 35 U.S.C. § 102(e), as being anticipated by U.S. Patent No. 5,960,451 to Voigt et al. ("*Voigt*"). This rejection is respectfully traversed.

As to Claim 1, the Office Action states:

> Voigt teaches the claimed "one or more hosts" as computer 22 and/or computers coupled to network 36. The claimed "plurality of data storage elements" correspond to memory 44, 42 and data storage system 24. The claimed "host network attachment" corresponds to circuitry inherently found in computer system 20 for connecting the memory to the network. The claimed "storage server/controller" corresponds to circuitry including RAID management system 56 and/or controllers 54a, 54b. The claimed "permanent data storage media" corresponds to non-volatile memory 44. The claimed "management information" corresponds to parameters/preferences such as physical capacity, number of storage disks, allocated capacity, characteristics of the RAID, percentage to be used (col. 2, line 55 – col. 3, line 2), performance (col. 4, line 16) and availability (col. 7, lines 26-42). The claimed "units of data" corresponds to the logical storage units (LUNs). The claimed function of "management information may be manipulated" corresponds to altering characteristics/parameters of the RAID or logical storage units (LUNs).

Office Action dated December 9, 2003, page 4.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only, if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983).

In this case, each and every feature of the presently claimed invention is not shown within *Voigt* arranged as in the rejected claims. Claim 1 reads as follows:

> 1.   A virtual stored data management system; the virtual stored data management system comprising:
>   one or more hosts;
>   a plurality of data storage elements functionally coupled to the one or more hosts, wherein the plurality of data storage elements include a host network attachment, a data transfer system, at least one of a storage server and a controller, and a permanent data storage media, wherein the permanent data storage media is organized with management information uniquely associated with units of data such that the management information may be manipulated in several different locations within the virtual stored data management system; and
>   virtualization means for converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements.

Specifically, *Voigt* does not show or disclose virtualization means for converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, as in Claim 1. Support for this feature is disclosed in the present specification at page 20, lines 16-27, page 21, lines 1-11, and Figs. 7, 9 with associated text.

In contrast, *Voigt* discloses a system and method for reporting available capacity in certain data storage systems, such as Redundant Array of Individual Disks (RAID) data storage systems. *Voigt* describes a hierarchic RAID system that computes a maximum number of virtual blocks in mirror RAID areas based on a function of the

physical capacity of the storage disks, the number of storage disks, and the allocated capacity at the time of each storage request from the user. *Voigt* provides a system and method for reporting information on available capacity and current RAID configuration to an administrator so that the administrator can make decisions concerning the creation or reconfiguration of current logical storage unit or LUN characteristics. The system provides a graphical user interface (GUI) that presents an existing LUN arrangement composed of multiple types of LUNs. The GUI shows the administrator the available capacity given the existing LUN arrangement, which allows the administrator to propose different configurations with one or more hypothetical LUNs, without physically creating them. However, *Voigt* does not disclose, suggest or teach the features of a virtual stored data management system including virtualization means for converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, as recited in Claim 1. Therefore, since each and every feature of Claim 1 is not shown within *Voigt* arranged as in Claim 1, *Voigt* does not anticipate Claim 1 and this rejection should be withdrawn.

Since dependent Claims 2-23 depend from independent Claim 1, the same distinctions between *Voigt* and the claimed invention in Claim 1 also exist for these dependent claims. Additionally, Claims 2-23 claim other additional combinations of features not suggested by *Voigt*. Consequently, it is respectfully urged that the rejection of Claims 2-23 has been overcome. Therefore, the rejection of Claims 1-23, under 35 U.S.C. § 102(e), has been overcome.

Furthermore, *Voigt* does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. *Voigt* actually teaches away from the presently claimed invention, because *Voigt* teaches a system and method that allows an administrator to propose different configurations with one or more hypothetical LUNs, **without physically creating them,** as opposed to actually converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, as in the presently claimed invention. Absent the Examiner pointing out some teaching or incentive to implement *Voigt* so as to convert a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, one of ordinary skill in the art would

not be led to modify *Voigt* to reach the present invention when *Voigt* is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Voigt* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using the Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

VI. 35 U.S.C. § 103, Obviousness

The Examiner has rejected Claims 2-23, under 35 U.S.C. § 103(a), as being unpatentable over *Voigt*. This rejection is respectfully traversed.

According to the Examiner, *Voigt* teaches the invention substantially as claimed as discussed above with respect to the rejection under 35 U.S.C. § 102(e). Also, the Examiner takes official notice of the prior art teaching any claim feature not specifically discussed above with respect to the rejection under 35 U.S.C. § 102(e).

As discussed above, *Voigt* does not teach or suggest the features of a virtual stored data management system including virtualization means for converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, as recited in Claim 1. Also, as discussed above, *Voigt* does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. *Voigt* actually teaches away from the presently claimed invention, because *Voigt* teaches a system and method that allows an administrator to propose different configurations with one or more hypothetical LUNs, **without physically creating them,** as opposed to actually converting a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, as in the presently claimed invention. Absent the Examiner pointing out some teaching or incentive to implement *Voigt* so as to convert a storage request to a virtual volume into a storage request to at least one data storage element of said plurality of data storage elements, one of ordinary skill in the art would not be led to modify *Voigt* to reach the present invention when *Voigt* is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Voigt* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using the Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

In any event, since dependent Claims 2-23 depend from independent Claim 1, the same distinctions between *Voigt* and the claimed invention in Claim 1 also exist for these dependent claims. As such, dependent Claims 2-23 are patentable for the same reasons given above with respect to Claim 1. Therefore, the rejection of Claims 2-23, under 35 U.S.C. § 103(a), has been overcome.

VII.   Conclusion

It is respectfully urged that the subject application is patentable over *Voigt* and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: March 9, 2004

Respectfully submitted,

Richard J. Moura
Reg. No. 34,883
Carstens, Yee & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380
(972) 367-2001
Attorney for Applicants

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PAGE 13/14 * RCVD AT 3/9/2004 3:10:40 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/10 * DNIS:8729306 * CSID:972 367 2002 * DURATION (mm-ss):04-58

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Docket No. 00-116-DSK

SUBSTITUTE PAGE

FLOATING VIRTUALIZATION LAYERS

CROSS REFERENCE TO PROVISIONAL AND RELATED APPLICATIONS

        This application claims the benefit of the filing date
of corresponding U.S. Provisional Patent Application No.
60/212,772, entitled "System for providing a policy-based
demand and use of functions like virtual volumes, instant
copy, RAID, etc.", filed June 19, 2000. In addition, the
present invention is related to applications entitled
SYSTEM TO SUPPORT DYNAMICALLY FLEXIBLE DATA DEFINITIONS AND
STORAGE REQUIREMENTS, serial no. 09/751,635; APPARATUS AND
METHOD FOR DYNAMICALLY CHANGEABLE VIRTUAL MAPPING SCHEME,
serial no. 09/884,294; USING CURRENT RECOVERY MECHANISMS TO
IMPLEMENT DYNAMIC MAPPING OPERATIONS, serial no.
09/800,714; DYNAMICALLY CHANGEABLE VIRTUAL MAPPING SCHEME,
serial no. 09/751,772; RECOVERY OF DYNAMIC MAPS AND DATA
MANAGED THEREBY, serial no. 09/752,253; and SELF DEFINING
DATA UNITS, serial no. 09/751,641, which are assigned to
the same assignee, and incorporated herein by reference.